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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,204	02/27/2004	Toshihisa Nozawa	09459.0001	4678
22852 7590 06/21/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER DHINGRA, RAKESH KUMAR	
			ART UNIT 1763	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/787,204	Applicant(s) NOZAWA ET AL.	
	Examiner Rakesh K. Dhingra	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,6-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,6-9 and 11-18 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities:

Lines 9, 12 of the claim recites “exhaust the ----- gas inside of the process chamber” may be changed to “exhaust the ----- gas from inside of the process chamber” to correctly indicate the gas is being exhausted from inside the process chamber.

Appropriate correction is required.

Response to Arguments

Applicant's arguments with respect to claims 2, 3, 6-9, 11-18 have been considered but are moot in view of the new ground(s) of rejection as explained hereunder.

Applicant has amended claims 2, 11 by adding new limitations including the limitation “wherein the first exhaust port of the first exhaust mechanism and the second exhaust port of the second exhaust mechanism are connected with a common pump”.

Accordingly claims 2, 3, 6-9 and 11-18 are currently pending and active.

New reference by Koshimizu (US Patent No. 6,162,323) has been found that reads on independent claims 2, 11. Accordingly claims 2, 11 and dependent claims 7, 14 have been rejected under 35 USC 102 (b) as explained below.

Further dependent claims 3, 6, 8, 9, 12, 13, 15-18 have been rejected under 35 USC 103 (a) as explained below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 7, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Koshimizu (US Patent No. 6,162,323).

Regarding Claims 2, 11: Koshimizu teaches a plasma apparatus (Figure 4) comprising:

A processing vessel 104 for processing a substrate W, a gas inlet ports 136, 144 with gas source unit 142 (gas introducing mechanism), an electrode 116 (holding mechanism) for holding a substrate W horizontally on its surface, first exhaust line with exhaust port 608 positioned higher than substrate surface and second exhaust line with second exhaust port 602 and wherein the first and second exhaust ports 608, 602 are connected to a common pump 606 (column 10, lines 5-65).

Claim limitation - configured to introduce first gas and second gas, in line 3 of the claim, is an intended use limitation and can not be given patentable weight, since structurally the apparatus of prior art does have gas introduction means for introducing process gas, wherefrom any process gas (includes first gas and second gas) could be introduced into the process chamber. Further, claim limitations pertaining to exhaust of plasma processing gas from first exhaust port, and the exhaust of cleaning gas from second exhaust port are intended use limitations and can not be given patentable weight, since the apparatus of prior art meets the structural limitations of the claim. Similarly, the claim limitation "the second gas removing reaction products remaining in the process chamber" (for claim 11) is an intended use limitation and can not be given patentable weight, since the apparatus of prior art meets the structural limitations of the claim.

Regarding Claims 7, 14; Koshimizu teaches that his invention is also applicable to microwave excitation (Figure 9) wherein microwaves are generated by a microwave generating source 402 and

transmitted to the chamber through a waveguide 404. Further, claim limitations pertaining to microwave generation during cleaning of chamber is an intended use limitations and can not be given patentable weight, since the apparatus of prior art meets the structural limitations of the claim [column 13, line 55 to column 14, line 34].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 6, 8, 9, 12, 13, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshimizu (US Patent No. 6,162,323) in view of Xi et al (US PGPub. No. 2003/0198754).

Regarding Claims 3,12: Koshimizu teaches all limitations of the claim but do not teach a hoisting/lowering mechanism configured to move the holding mechanism upward when the substrate is plasma-processed, and move the support mechanism downward when the inside of the chamber is cleaned, wherein the first exhaust port is positioned higher than the surface of the substrate on the holding mechanism that has been moved up by the hoisting/lowering mechanism, and wherein the second exhaust port is positioned lower than the holding mechanism that has been moved down by the hoisting/lowering mechanism.

Xi et al teach an apparatus (Figures 1, 9) that includes a process chamber 10 with dual exhausts 18A, 18B, substrate support pedestal 48 (like a support mechanism) and a lift assembly (hoisting /lowering mechanism) 48 that enables up/down movement of support pedestal 48. Xi et al further teach that at any given moment either one, or both or none of the exhaust is open to cavity. Xi further teach a controller 70 that regulates the operation of various components of the processing system (includes control of first and second exhaust ports, up/down movement of holding mechanism during processing operations (paragraphs 0031-0032, 0041, 0058).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a hoisting/lowering mechanism and a system controller as taught by Xi et al in the apparatus of Koshimizu to enable alter height of substrate holder as per process and also provide control and regulation over various sub-systems of the processing system.

Regarding Claims 6, 8,13, 15: Xi et al teach that both exhausts 18A, 18B can be connected concurrently to process chamber (paragraph 0041).

Regarding Claims 9, 16-18: Koshimizu teaches that his invention is also applicable to microwave excitation (Figure 9) wherein microwaves are generated by a microwave generating source 402 and transmitted to the chamber through a waveguide 404. Further, claim limitations pertaining to microwave generation during cleaning of chamber is an intended use limitations and can not be given patentable

weight, since the apparatus of prior art meets the structural limitations of the claim [column 13, line 55 to column 14, line 34].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rakesh K. Dhingra whose telephone number is (571)-272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rakesh Dhingra



Parviz Hassanzadeh
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Art Unit 1763